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Reply to Non-Compliant Amendment of 11/8/04 and
Office action of 8/8/05

Amendments to the Specification:

Please replace the following specification from page [1 to 13] with the following amended specification page:

Background–field of invention

[1-13] This invention relates to variable or invariable audio enhancing circuits of communication such as an audio circuit that is provided for enhancing audio signals that derive from an acoustic source more specifically for enhancing acoustic quality of communication systems. The invention further reflects on means for conveying audio signals such as multiplexing techniques and coupling methods of communication. The audio enhancing circuit, as described, refers to audio enhancing circuits, such as audio processing circuits and other audio enhancing circuits for providing acoustic enhancement communication procedures to a communication system.

Background--Description of Prior Art

Radio communication is an exiting new concept, but this phenomenon can also bring forth harmful communicational conditions. In referents to the remote mobility that these wireless communication devises provides, it may be reasonable to state under mobile conditions, that wireless telephones are used any where from commercial and residential areas to automobiles.

A prior invention relatives to a magnetic hearing aid which accordingly couples with a communication system to aid in the conveyance of audio signals during communication procedures is provided in U.S Patent number 5740257 by Marcus; Larry Allen April 14, 1998 which describes a magnetic coupling hearing aid with active noise control for eliminating noise by generating a representation of the original input signal. Thereby, the generation is employed to drive an individual external field coil. The external field coil is positioned between the handset receiver and the handset audio output ports for easy access or convenient operation to a user. A receiving apparatus is disposed into the ear cavity for signal response and to drive a magnetic field comprising an interior cavity and an audio output port for inputting signals to an ear cavity having a receiver in said interior for receiving an audio signal and transducer for communicating with said ear cavity.

The following specification refer to an audio enhancing circuit, such as an audio enhancing circuit that is designed for enhancing audio signals or original audio signals that derive from a source of interest, such as at least one acoustic source which may be vocal acoustic source. Said audio enhancing circuit is an audio processing circuit such as an audio equalizer circuit or other audio circuit that enhance audio signals such as a crossover network circuit in which enhances said originals audio signals to refine acoustic value or perimeter for the conveyance of the enhanced audio signals for means of enhanced acoustic communication. Furthermore, said audio enhancing circuit consist of at least one audio input port or at least one audio input section that is capable of inputting said original audio signals from said acoustic source to said audio enhancing circuit, and further said audio enhancing circuit is able to be integrated with other audio enhancing circuits herein. Therefore, the integration of said audio enhancing circuit is capable of implementing comprehensive audio enhancement communication procedure thereof. For the conveyance of high quality audio signals herein, multiplexing technique may apply as stated in the subsequent section hereof. Under the provided terms, the description Fig. 3E illustrates an audio enhancing circuit, such as said crossover network circuit connecting to the input port for the correspondents of said original audio signals from said acoustic source, such as a microphone; in which, the microphone then outputs signals that thereby emits to said crossover network circuit. Thus, the communication procedure employs the enhanced audio signals with the corporation of the audio enhancing circuit that process the signals to refined degrees according to variable technical arrangements herein. This procedure implements a mode that communicates enhanced acoustic signals in at least one direction. Therefore, this method is entitled *The One-Way Audio Enhancing Communication Method.*

Fig. 3E illustrates an input-port **87** for inputting said original audio signals from the output section of the microphone thereby connecting said original audio signals from said output section of said microphone to the main input **25** of a high band-pass filter circuit of a crossover network circuit. From the positive terminal **15** of a high band-pass one-element filter circuit, a contact is made to a conductor **44**. From the opposite end of said conductor, a contact is made to the positive terminal **15** of the input-port **87** for inputting said original audio signals of said microphone. From the negative **14** terminal of the same input-port, a connection is made to the negative terminal of said high band-pass one element filter circuit.

Illustrative Fig. 4H illustrates a method of constituting control means in an audio enhancing circuit, such as a crossover network circuit which incorporates a communication system in which thereby enables the acoustic enhancement communication system to tune and control audio signals while communicating said audio signals to a corresponding communication system therein. At least one of each control element may apply to this application as follows: a variable input dB gain control circuit **90** connected to the main input terminals of the crossover network circuit for varying the gain of input signals, a variable millisecond delay control circuit **54** connected to said crossover network circuit, a variable low dB gain control circuit **93** connected to a section of the low band-pass filter circuit **35** for varying the gain of low band range audio signals, a variable low-range frequency control circuit **94** connected to the low band range filter circuit whereby varying the frequency range of low-band pending audio signals thereof, a variable high frequency gain control circuit connected to a section of the high band-range filter circuit **34**, a variable mid frequency gain control circuit **94** connected to the two element mid band pass filter circuit **36** for varying the gain of mid-band range audio signals, a high frequency dB gain control circuit **94** connected to the one element high band-pass filter circuit for varying the gain of high range audio signals, a variable master dB gain control circuit **123** connected at the output of the crossover network circuit and a threshold dB control circuit connected to said crossover network circuit. Fig. 4E shows a switch, an IC chip, control means and illustrates the constitution of an integrated control circuit of an audio enhancing circuit such as a crossover network circuit. The center pole of a switch is connected to a MF8 IC timer. The diagram in Figs. 4A to Fig. 4G illustrate connections of a switch and an IC chip timer. From a positive 5-volt terminal, **15** contact **70** is made to the center-pole **46** of a multi-position rotary switch. From an output section of the IC timer **54**, a contact is made to the conductor of a male connector. The male connector thereby engages **37** with a female connector.

Press on the bottom end **80** of the switch to decrease the master audio level of the audio enhancing circuits, which thereby affect the level of the acoustic enhancement communication system herein. Fig. 10C further illustrates the external monitor section **71** that includes display means **27** for displaying the current status and said external monitor section for monitoring said current status of the audio enhancing circuits that includes the first section **110** consisting of control elements for said 3-way crossover network circuit and said tunable one-way crossover network circuit or tunable composite filter circuit, which is located at the left side of the external monitor. The selection switch **119** is provided which is employed to execute the common that enables the selection of the 3-way crossover network circuit and the tunable one-way crossover network circuit or tunable acoustic composite filter circuit. When said selection switch is switched to the symbol 3-W position it indicates that the three way crossover network circuit is selected for operation, and when said selection switch is switched to the symbol 1-W position it indicates that the tunable one-way crossover network circuit is selected for operation. Adjust the 1-way/3-way crossover network's master volume unite **120** control element to vary the master volume of the 3-way/1-way crossover network or tunable filter circuit hereof. To vary the width of the band of frequency and to set the millisecond time interval, vary the band frequency band width/mSec. control circuit **111.** Vary the 3-way/1-way crossover network, or tunable filter circuit's external variable gain control element **118** to vary the volume of a band of audio signals of said 3-way/1-way crossover network or tunable filter circuit. A) Vary the external variable high frequency range control element **115** to adjust the high range frequencies of said 3-way/1-way crossover network or tunable filter circuit. B) Vary the external variable midrange-frequency control element **116** to adjust the midrange frequencies of said 3-way/1-way crossover network or tunable filter circuit. C) Vary the external variable low-range frequency control element **117** to adjust the low-range frequencies of said 3-way/1-way crossover network or tunable filter circuit. Said external monitor section includes the second section **112** containing the control elements of other audio enhancing circuits such as the audio equalizer circuit and the audio preamplifier circuit in which contain variable treble control element **113** and variable bass control element **114.** On the equalizer's external monitor section, vary the preamp/audio equalizer's variable unit volume control element **120** to adjust the volume of a section or unit of audio enhancing circuit such as the audio preamp/audio equalizer circuit. To vary or control the audio signals of the EQ/preamp circuit repeat step A), B) and C) in said second section of the EQ/PREAMP 's external control unit.

A simple/*duplex-stereophonic procedure* of applying a stereo phonic sound to the audio section of duplex communication apparatuses, such as Telephones, Two-way radios, C.B radios, Amateur radios, modem apparatuses or a verbal simplex communication devices is included in the following procedures: providing at least one audio reproductive element whereby reproducing a first channel of audio signals which is the right acoustic channel of out putting audio signals, employing at least one second channel of said reproductive element whereby reproducing a second channel of audio signals, which is the left channel of outputting audio signals. Said at least one audio reproductive element is respectively connected to at least two channels of said communication apparatus. Dual or single communicative channel connection procedure is applied to a transmitter or/and a receiver depending on the designation of the directional flow of enhance audio signals that the provided communicative application is design for. For instance, an application may incorporate a simplex acoustic enhancement (one-way) communication mode where said enhanced audio signals may only communicate in one direction, which employ one communicative channel or the opposing mode may apply to the acoustical enhancement system in which enabling said enhance audio signals to be communicated in duplex (two-way) communication mode thereby employing two communicative channels thereby channeling transmission and reception of said enhanced audio signals in a duplex/simplex mode.

For example, the external coupling technique that is provided herein may employ one, two, three or more bands of enhanced audio signals to the application according to the designative condition or criteria that are primarily generated from the integrated circuit or circuits in said application. In that respect, the external coupling method may vary accordingly in an attempt to meet the designative condition or criteria that is current of the integrated audio enhancing communication system. From this aspect Fig. 6G illustrates an example, via demonstrating a potential result under the terms when a 3-way crossover network is employed, which generates three bands of audio signals. The three bands of enhanced audio signals may employ at least one **87** or three dispensable audio ports or/and at least one or three acoustical connections or a connection technique which substantially convert two, three or more bands of audio signals into at least one band of audio signals. Therefore, said connection technique may refer to the basic specifications that is relative to the junction of a three to one downward modification technique, which is illustrated in Fig. 6E and is provided in this application thereafter. This down word modification technique, convert a 3-way crossover network to a 1-way crossover network or tunable filter circuit, as stated below but respectively in consideration to the diverse properties that these two procedures provides which are distinctive in nature and therefore differentiate in criteria. Though, when the external method employs the junction concept of the three to one or the lineal value-1 downward modification technique, thus, this lineal technique eliminates the employment of excessive conductors or audio cables which is adopted for voluntarily coupling said at least one band of audio signals from the receiver to at least one external coupling medium or audio cable **87** when the at least two or three to one convertible connection technique is applied which provides the configuration of more than one elements to accordingly convert at least two or three conductors by combining the conductors into one distinctive conductor as illustrated in Fig. 6E.

The method includes the configuration of an audio enhancing circuit such as crossover network circuit to form a predetermined at least one composite-band audio enhancement communication system. This method consists of converting a 2-way crossover network circuit (two output channels) which produces two bands of audio signals or a 3-way crossover network circuit (three output channels) which produces three bands of audio signals to a one way (one output channel) audio enhancing circuit which is a one-way crossover network circuit or composite acoustic filter circuit that is able to employ one channel that dividedly compact a plurality of band audio signals. The single composite output channel of the one-way crossover network or tunable acoustic filter circuit consisting of at least one IC timer circuit that is capable of providing a serial transmission procedure. In that manner, said two bands of audio signals or said three bands of audio signals are capable of respectively communicating in series order. Therefore, three bands of audio signals that is produced by a frequency divider circuit, such as the 3-way crossover network circuit, has the ability to be distinctively communicated up on initial transmission. Hereby, said three bans of audio signals are virtually capable of driving at least one various-range speaker system; providing that, the receiver section of the communication system consist of an integrated retrieval circuit at the end audio circuit of the receiver which is able to retrieve the parent divided bands of audio signals which was produced by the preceding 3-way crossover network circuit that was arranged to produce and output the three divided bands of audio signals to the IC timer circuit then to said receiver section that includes the integrated retrieval circuit thereby retrieving the received enhanced audio signals that thereby drives a various-range speaker system of the receiver or full range speaker which consists of a high range inner cone for high frequency signals and a main cone for mid range frequency signals and low range frequency signals. Therefore, each range of frequency maintains its individual ability of being tuned or control by control means respectively in comparison with the prior conventional three-way or two-way crossover network circuit in which is capable of tuning audio signals by varying a selected range of tone or audio signals and also varying the dB value or other value of a selected range of said audio signals herein.

Generalized aspects of alternative terms regarding the specifications of the provided application are presented: Therein recites in terms that a verbal-simplex or a duplex communication system which comprises at least one audio enhancing circuit, such as a crossover network circuit that was used as a sample in the previous specification, may be alternated for an alternative mode of use. Therefore, audio enhancing circuits such as an audio preamplifier circuit an audio equalizer circuit, crossover network circuit, a stereo phonic, mono phonic, stereo/mono application or other audio enhancing circuits may be employed in substitute of the crossover network circuit, or said at least one audio enhancing circuit may be integrated with other audio enhancing circuit such as an audio preamplifier circuit, audio possessing circuit, audio mixer circuit, audio filter circuit, audio compressor circuit, audio amplifier circuit, an acoustic noise reduction circuit, crossover network circuit or other audio enhancing circuit and cooperate to accommodate more comprehensive features of the audio enhancement communication system hereof. Each of the above compatible audio enhancing circuits is capable of individually interacting with the communication apparatus when engaged as an individual unit. For example, the stereophonic sound application or said audio equalizer circuit may be employed as a single audio enhancing circuit. Therefore, the audio enhancing circuit operates as a solo audio enhancing circuit that is individually connected to said communication apparatus whereby said solo audio enhancing circuit is capable of producing enhanced audio signals respectively to said communication apparatus as an individual entity herein. On the other hand, when said audio enhancing circuit is employed as a multi-integrated system which may miscellaneously incorporate various components such as at least one audio preamplifier, and/or at least one audio equalizer circuit. In addition, the plurality of internal integrated circuits cooperates accordingly by corresponding to interactive signals of the various enclosed interconnecting audio enhancing circuits herein. The application of mono/stereo sound may individually be apply to any specified audio enhancing circuit stated above depending on the aspirations of the application of this nature. A desired interconnection configuration can be applied in various orders depending on the impending or predetermine concept or method of application thereof. For example, an audio mixer circuit may be employed as the primary audio signal enhancing circuit then subsequently other audio signal enhancing circuits may follow in subsequent manner such as an audio preamplifier circuit or audio equalizer circuit etc.